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described as remarkably successful in making plain the characteristics of the rocks.

OLEOMARGARINE.—Mr. John Michels has recently studied this substance, and drawn its appearance under the microscope. The abundant fat globules and occasional crystals of common salt which are found in real butter are almost entirely wanting, and in their place are found an abundance of large feathery crystals and of fragments of animal tissues. As the fat is merely liquified and set free by a heat not exceeding 120° Fahrenheit, and manipulated so as to have the general appearance of butter, any germs of disease or embryos of parasites it may have contained are liable to be preserved alive and transferred to the systems of those who make use of the substance. He therefore considers the oleomargarine, though for cooking purposes an excellent substitute for any fat previously used, to be eaten in a raw state as a substitute for table butter only at considerable risk.

Mr. E. J. Wickson described at the San Francisco Society the character of oleomargarine cheese. The cream from the milk is removed, and then liquid oleomagarine stirred in to replace the fat thus taken away. The mass is agitated, and rennet enough added to form a curd quickly before the oil can separate from the skim milk, in order to form an emulsion of oil and a menstruum of solid casein, like that which exists in cheese from natural milk. This process has succeeded so well that chemical analysis has shown the artificial cheese richer than the genuine, and so great an improvement on skimmed cheese that large quantities are sold in New York and shipped to Europe. Under the microscope this artificial preparation, on account of the imperfect emulsion formed, shows cavities of irregular shape in which the artificially introduced fat was imprisoned when the curd was formed, instead of the smooth mixture of fat globules found in cheese from full cream milk.

A RARE SALE.—The microscopes, objectives, accessories and objects of the late distinguished and critical microscopist, John E. Gavit, are now offered for sale by his son, W. E. Gavit, of Stockbridge, Mass., from whom catalogues and particulars can be obtained.

EXCHANGES.—The San Francisco Microscopical Society is now enabled, by the kindness of the State Geological Society, to offer return exchanges of Pacific Coast diatomaceous deposits on receipt of any valuable microscopical material.

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SCIENTIFIC NEWS.

— Professor Joseph Henry, of the Smithsonian Institution, died May 13th, at Washington, of Bright's disease of the kidneys. Professor Henry was born in Albany, N. Y., on the 17th of December, 1797. At the end of a course of study at the common schools he entered the Albany Academy, where he displayed a marked taste for scientific and mechanical branches, and he followed a natural bent when he afterward learned the watchmaker's trade. In 1826 he laid aside his business to become an instructor at the Academy, and the next year began a series of experiments in electricity which introduced him to the notice of the world of scholars. Among his earliest discoveries was the fact that in the transmission of electricity for great distances, the power of the battery must be proportioned to the length of the conductor, and he was the first to magnetize a piece of iron at a distance or make use of electro-magnetism as a motor for machinery. In the last instance an oscillating iron beam was surrounded by a conductor or insulated copper wire. A current of electricity was sent through this in one direction, which caused one end to be repelled upward and the other attracted downward by two stationary magnets. The downward motion of the one end of the beam near its lowest point brought the conducting wires in contact with the opposite poles of the battery, which produced the reverse motion, and so on continually. In a later arrangement the velocity of motion was regulated by a fly-wheel, and electro-magnets substituted for the permanent magnets at first used.

In 1829 Prof. Henry prepared some electro-magnets of a power higher than any yet produced, and one which he afterwards constructed on the same plan, and which will sustain thirty-six hundred pounds with a battery occupying only a cubic foot of space, is still exhibited in the cabinet of the College of New Jersey. Continuing his investigations, he at length astounded his friends by applying the principle which we now see in use every day in the electric telegraph—making a bell to ring at one end of a wire a mile long by the transmission of a current from the other end; and in a paper printed in Silliman's *American Journal of Science* in 1831, he pointed out the possibility of employing such an agency for the instantaneous conveyance of intelligence from one point to another far distant. This, it must be remembered, was thirteen years before Morse put the idea into practical operation. Within a twelve-month of the time these startling experiments were published, Prof. Henry was called to the Chair of Natural Philosophy in Princeton College. In 1837 he visited London, where he interested Sir Charles Wheatstone, then a Professor in King's College, in his discoveries, elaborating some of them and suggesting the capabilities opened up by others. When the Smithsonian Institution was organized at Washington, Professor Henry was appointed its Secretary, and he has filled that responsible position ever since with distinguished ability. His research has been confined to no one department of science, and his zeal for the dissemination of results has kept pace with his devotion to the improvement of process. In 1872 we find him negotiating with the authorities of the Atlantic cable to procure the free transmission of important discoveries in astronomy, till he has perfected a system by which an announcement is flashed from any part of America to the Smithsonian Institution, and thence to the observatories in Paris, London, Berlin and Vienna, all in a time scarcely long enough to estimate and without drawing a dollar from the proverbially low purses of the star-gazing fraternity. The same year witnessed the completion by the Royal Society of London of a "Catalogue of Scientific Papers"—a compilation of incalculable usefulness to scholars—mainly in response to a suggestion made by Professor Henry in 1858. To him we owe, perhaps, more than to any one man, our present position as a nation in the domain of meteorology; it was he who devised our system of weather despatches, and who forsaw the importance of tabulating them and preparing the daily maps now in use. As an astronomer he was a leading figure as early as 1845, when he published his observations on the temperature of the sun, which were confirmed by Secchi seven years later, and have remained unshaken in their passage through a score of hands since. As a topographer he took a lively interest in the changes of level in the neighborhood of the Great Salt Lake, and it is at his suggestion that a monument was erected there, in 1874, for the purpose of making standard measurements. It was he who, at the age of seventy-seven, successfully entered the lists with Professor Tyndall as an investigator of the questions involved in the perfection of fog signals for use on the ocean coasts. Thus in every domain he enters we find him an enthusiast and a master, his whole soul given to the advancement of the good of his race by practical means.

His place will be difficult to fill in many ways, but his loss will be especially felt on account of the influence of his noble moral character. He was a man of the clearest sense of justice, and would tolerate no wrong; yet as a good man he was not prone to suspect evil in others. His rectitude was equalled by his charity; but this virtue did not, as too frequently, impair the decision of his acts. He was essentially free from partisan spirit, and although his own views were broadly liberal, he had no sympathy with the methods of some of the modern apostles of liberalism, who while they destroy, fail to offer satisfactory substitutes. The young scientists of this country of the present generation, who have so often found him a friend in the past, are fortunate in the possession of his example for the future.

— The distinguished invertebrate palæontologist, Wm. M. Gabb, died May 30th, in this city, of consumption. He was born January 20, 1839, and was consequently in his fortieth year. He had returned home but a short time previous to his death from Santo Domingo, where he had so ably labored in his chosen pursuits—geology and palæontology. He began his career as geologist in the capacity of chief of the Geological Survey of California, to which post he had been assigned by Prof. Whitney. He made extensive geological and geographical explorations along the west coast, California, Oregon and Nevada; he also engaged in a survey of the peninsula of Lower California, of which it is said he made the most accurate map extant. His principal work, however, was his explorations in Costa Rica, and especially Santo Domingo, to the topography and geology of which he had given much study, and the results of which he embodied in his quarto report published by the American Philosophical Society. Numerous other papers on the secondary fossils of the United States, Santo Domingo and Peru were contributed by him to the Proceedings and Journal of the Academy of Natural Sciences and to the Transactions and Proceedings of the American Philosophical Society. American science sustains a severe loss in his death in the departments in which he labored, and to which he had contributed upwards of fifty papers up to the time of his death.

— The North Mountain Camp of Physical Culture, so successfully established by Dr. J. T. Rothrock in 1876, and continued last summer by Messrs. Taylor and Frank, will be open during the coming months of July and August, and will be conducted upon the same general plan as that of previous years.

The primary object of the Camp-School is *physical culture.* No stated lessons from books will be required, nor will close mental application be allowed, though a part of each day will be devoted to instruction, which will consist of lessons in Geology, Botany, General Natural History and Drawing from Nature.

The location of the camp is near a mountain lake in the southeastern part of Sullivan Co., Pa., at an altitude of over two thousand feet above tide.

As a rule, boys from twelve to seventeen years of age only will be admitted, though in exceptional cases it may be found proper to admit others.

For the term of two months the charge is $100. This includes boarding, washing and tuition. While it is desirable that pupils remain during the entire term, they will be received for any part of the term, and will be charged in proportion to the time spent in camp. In all cases, however, one-half of the sum must be paid on entering, and the remainder when the pupil begins the latter half of his term, of whatever length it is decided that shall be.

The better route to reach the camp is by the Lackawanna and Bloomsburg Railroad to Shickshinny, and thence by stage to the North Mountain House.

For further information address L. H. Taylor, University of Pennsylvania, Box 2838, Philadelphia, prior to July 1, 1878; after that, Shickshinny, Luzerne Co., Penna.

— The Bridgeport Scientific Society was organized last year with H. N. Powers, D.D., president, and Clarence Sterling, curator, and has issued a circular calling attention to the desire on the part of the society of establishing a museum to illustrate the natural history and archæology of Western Connecticut. Correspondents and donors should address Clarence Sterling, curator Scientific Society, Bridgeport, Conn.

— The Cincinnati Society of Natural History has issued the first number of its journal, the subscription price of which is $2.

— The Chesapeake Zoölogical Laboratory of Johns Hopkins University opened June 15th for a two month's session at old Point Comfort, Va., under the direction of Dr. W. K. Brooks.

— Mr. J. W. Groves, of the South London Microscopical Club, after cleaning glass slides for mounting microscopical objects, by one of the usual processes, fastens them together by their edges, after the manner of the well-known artist's sketching blocks. This is easily done with a pile of slips, by fixing around their edges a piece of ready gummed tissue-paper, ten inches long, and of a width suitable to the number of slides, so that, although they are firmly bound together, their surfaces are left uncovered. The block is left to dry, when each slip may be detached by running the thumb nail round its edges. The surface next the adjoining slip should be used for the preparation to be mounted on, as it is, of course, quite clean, although the exposed one may have become dirty; the fragments of tissue-paper are removed after the mount is completed.—*Quarterly Journal of Science, London.*

— Under the title of Essai sur le Classement des Animaux qui vivent sur la Plage et dans les Environs de Dunkerque, M. O. Terquem gives a catalogue, illustrated with five excellent plates, of the Foraminifera which live on the shores of Dunkirk, Belgium.

— The total production of silk-cocoons in Europe amounted upon an average to 58,000 tons per year during the last five years. Italy stands first in the list of silk-producing countries, producing 39,000 tons per year; France produces about 10,000 tons; Turkey 4000; Spain 2200; Austria 1900; Portugal 250; Greece 200; Russia 150; Germany 100, and Belgium and Switzerland only 100 tons together.—*Nature.*

— Arrivals at the Philadelphia Zoölogical Garden: 1 spotted sandpiper (*Tringoides macularius*); 1 zebu (*Bos indicus*) ♂, born in the garden; 2 lizards (*Holbrookia maculata* and *Crotaphytus collaris*), Texas; 2 Carolina parrakeets (*Conurus carolinensis*); 1 corn snake (*Coluber guttatus*); 1 mountain black snake (*Coluber obsoletus*); 1 blue-jay (*Cyanurus cristatus*); 1 ring-necked snake (*Diadophis punctatus*); 9 prairie dogs (*Cynomys ludovicianus*), born in the garden; 1 broad-winged buzzard (*Buteo pennsylvanicus*); 1 spreading adder (*Heterodon platyrhinus*); 1 pine snake (*Pityophis melanoleucus*); 1 glass snake (*Ophiosaurus ventralis*); 1 opossum and young (*Didelphys virginiana*); 1 scarlet ibis (*Ibis rubra*), South America; 2 copperheads (*Ancistrodon contortrix*); 1 great horned owl (*Bubo virginianus*); 2 gray foxes (*Vulpes virginianus*); 1 raccoon (*Procyon lotor*); 1 garter snake (*Eutænia sirtalis*); 1 woodchuck (*Arctomys monax*); 5 alligators (*Alligator mississippiensis*); 2 wild boars (*Sus scrofa*), North Africa.

— A new industry has recently sprung up in parts of Minnesota, namely, frog culture; it is a simple matter, consisting chiefly in the protection of eggs and tadpoles from birds and other enemies, by means of wire screens. The product, thus far reported, amounts to 3,000 dozen of frogs' legs, of which about two-thirds have been shipped to St. Louis. The average quotation of prices is 20 cents per dozen.

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PROCEEDINGS OF SCIENTIFIC SOCIETIES.

American Geographical Society.—May 14.—Mr. Jesse Young read a paper upon his recent journey of exploration as the astronomer of the Giles Expedition across the continent of Australia, with descriptions of the deserts, native races and the natural history of the country.

May 28.—Gen. C. Chaillé Long lectured on Egypt, Africa and Africans, embracing the following subjects: Egypt's annexations; the results of his expeditions in Central and Oriental Africa; his discovery of Lake Ibrahim and two hundred miles of the unknown White Nile; the source of the Nile; M'tse, King of Uganda; the Niam-Niams; Akka, or Ticki-Ticki, and the Anthropophagi and pigmy tribes.

Boston Society of Natural History.—May 15.—Mr. Richard Rathbun read a Description of a Coral Reef in the Bay of Bahia, Brazil. Mr. J. A. Allen spoke on the Fossil Birds of North America, and Dr. T. Sterry Hunt remarked on the Taconic Rocks of North America.

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SCIENTIFIC SERIALS.[1]

Transactions of the American Entomological Society.—The last numbers (1 and 2 of vol. vii.) of the Transactions of the American Entomological Society, contains some articles of unusual interest. Among them are Notes on some species of *Hister*, and an elaborate revision of the species of *Acmæodera* of the United States, by Dr. Horn, illustrated by a plate. Dr. Horn also contributes Notes on some genera of *Cerambycidæ* of the United States. A number of new North American *Hymenoptera* are described by Mr. E. T. Cresson, comprising mostly bees. The most important paper is Dr. Horn's Descriptions of the larvæ of the North American genera of *Cicindelidæ*, also of *Dicælus*, with a note on *Rhynchophorus*, and illustrated with a plate, showing with more or less detail the larvæ of *Amblychila cylindriformis*, *Omus dejeanii*, *Tetracha carolina*, *Cicindela repanda*, *Dicælus* (*costatus ? purpuratus ?*).

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[1] The contents of these journals are for the most part selected.